

CLAIMS

1. A method of data collection on the operation of a packet transmission communication network (1) comprising interconnected routers (2) each including a routing unit (2a) and a control unit (2b) supervising the routing unit, the routing unit being arranged for transferring first packets between external ports of said router and for transferring second packets between the external ports of the router and an internal port connected to the control unit, the method comprising the following steps, parallel to the transfer of first and second packets by the routing unit:
 - selecting packets corresponding to at least some of the second packets transferred at said internal port of a router (2) by means of a determined collection filter; and
 - recording a content of the selected packets on a recording medium, said content comprising data on the operation of the network,the method being characterized in that the selection of packets and an extraction of said content to be recorded of the selected packets are carried out by means of a collection module (30) disposed inside said router (2) and connected to said internal port of said router.
2. The method as claimed in claim 1, wherein a recording unit (31) is connected to the communication network (1), remote from said router (2), and said content of the selected packets is sent to said recording unit.
3. The method as claimed in claim 2, also comprising a formatting of said content of the selected packets prior to the sending of this content to the recording unit (31) via the communication network (1), the

formatting comprising the assignment to the content of address data corresponding to the recording unit (31).

4. The method as claimed in claim 3, wherein the
5 content of the selected packets is encrypted prior to
the sending of this content to the recording unit (31)
via the communication network (1).

5. The method as claimed in any one of the preceding
10 claims, wherein the collection module (30) is remotely
programmable by means of program codes sent to the
collection module via the communication network (1).

6. The method as claimed in any one of the preceding
15 claims, also comprising a step of reading recorded
contents of selected packets.

7. The method as claimed in claim 6, also comprising
a selection step according to a filter for reading
20 recorded contents of packets selected according to the
collection filter.

8. The method as claimed in any one of the preceding
claims, wherein said content of a selected packet is
25 recorded with coordinates of said selected packet.

9. The method as claimed in claim 8, wherein the
recorded coordinates of a selected packet comprise a
timestamp of the collection of said selected packet.
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10. The method as claimed in claim 8 or 9, wherein the
recorded coordinates of a selected packet comprise an
address of the router (2) which contains said internal
port at which said second packet corresponding to said
35 selected packet is transferred.

11. A system of data collection on the operation of a
packet transmission communication network (1)

comprising interconnected routers (2) each including a routing unit (2a) and a control unit (2b) supervising the routing unit, the routing unit being arranged for transferring first packets between external ports of 5 said router and for transferring second packets between the external ports of the router and an internal port connected to the control unit, the system comprising:
- means for selecting packets corresponding to at least some of the second packets transferred at said 10 internal port of a router (2) by means of a determined collection filter and for extracting the content to be recorded; and
- a unit (23, 31) for recording a content of the selected packets on a recording medium,
15 the system being characterized in that said router (2) incorporates a collection module (30) connected to said internal port and comprising the means of selection.

12. The system as claimed in claim 11, wherein the 20 recording unit (31) is connected to the communication network (1) remotely from said router (2).

13. The system as claimed in claim 12, also comprising means of formatting said content of the selected 25 packets.

14. The system as claimed in claim 13, wherein the formatting means comprise means of assigning to the content address data corresponding to the recording 30 unit (31).

15. The system as claimed in any one of claims 12 to 14, also comprising an encryption module for encrypting said content of the selected packets.

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16. The system as claimed in claim 11, wherein the collection module (30) is arranged for receiving

programming codes of the collection module via the communication network (1).

17. The system as claimed in any one of claims 11 to 5 16, also comprising means for reading on the recording medium the recorded content of selected packets.

18. The system as claimed in claim 17, also comprising 10 means for selecting recorded contents of packets according to a read filter, when the contents of packets selected according to the collection filter are read on the recording medium.

19. The system as claimed in any one of claims 11 to 15 18, wherein the recording unit (23, 31) is arranged for recording said content of a selected packet with coordinates of said selected packet.

20. The system as claimed in claim 19, wherein the 20 recorded coordinates of a selected packet comprise a timestamp of the collection of said selected packet.

21. The system as claimed in claim 19 or 20, wherein 25 the recorded coordinates of a selected packet comprise an address of the router (2) which contains said internal port at which said second packet corresponding to said selected packet is transferred.

22. The system as claimed in any one of claims 11 to 30 21, also comprising a unit for simulating the operation of the communication network (1) by using the recorded contents of selected packets.

23. The system as claimed in any one of claims 11 to 35 21, also comprising a unit for constructing and/or updating, based on the recorded contents of selected packets, a table for determining paths intended to be

respectively assigned to packets transferred by the routing unit (2a) of the router.

24. A router (2) for a packet transmission
5 communication network (1), comprising a routing unit
(2a) and a control unit (2b) supervising the routing
unit, the routing unit being arranged for transferring
first packets between external ports of the router and
for transferring second packets between the external
10 ports of the router and an internal port connected to
the control unit, characterized in that it also
comprises a collection module (30) connected to an
interface between the routing unit (2a) and the control
unit (2b) to select at least some of the second packets
15 and extract a content to be recorded of the second
packets selected in parallel with the transfer of first
and second packets by the routing unit.

25. An application of the method according to any one
20 of claims 1 to 10 to a data collection used to
characterize a part of the operation of the network.

26. The application as claimed in claim 25, according
to which the collected data are also used to simulate
25 said part of operation of the network.